IN THE CLAIMS:

Please cancel claims 1-14 and add new claims 21-34 as follows:

1-14. (Canceled)

15. (Original) A method of detecting calcium containing endospores comprising the steps of:

a) directing calcium containing endospores into a chemiluminescent liquid;

i) chelating the calcium of said endospores; and

ii) reacting the chelated calcium to produce a light pulse; and

b) detecting the generated light.

16. (Original) The method of claim 15 wherein detecting calcium- containing endospores comprises the step of detecting endospores of the Bacillus genera.

17. (Original) The method of claim 15 wherein detecting calcium- containing endospores comprises the step of detecting endospores of the Clostridium genera.

18. (Original) The method of claim 16 wherein detecting

Bacillus genera endospores comprises the step of detecting endospores of the species Bacillus anthracis.

19. (Original) The method of claim 15 wherein chelating the calcium comprises the step of chelating the calcium with ethylenediamine tetraacetate.

20. (Original) The method of claim 15 wherein reacting the chelated calcium comprises the step of reacting the calcium with aequorin.

21. (New) The method of claim 15 wherein directing calcium containing endospores into a chemiluminescent liquid comprises the further steps of:

a) pumping air comprising calcium containing endospores through a particulate filter to remove particles greater than 20 μM; and

b) directing the filtered air into a reaction vessel containing the chemiluminescent liquid.

22. (New) The method of claim 15 wherein detecting the generated light comprises the further step of: directing the light pulse through a light guide to a spectrometer for converting the light pulse into an electronic signal.

23. (New) The method of claim 22 further comprising the step of: sending the electronic signal to a personal computer for viewing and analyzing by a user.

24. (New) The method of claim 22 further comprising the step of: sending the electronic signal to a chart recorder for recording the quantity of light generated.

25. (New) A method of detecting calcium containing endospores with an air pump, a particulate filter, a reaction vessel, and a spectrometer comprising the steps of:

a) pumping air comprising calcium containing endospores with the air pump into the reaction vessel containing a calcium chelating agent and a chemiluminescent photoprotein,

b) reacting the calcium containing endospores with the calcium chelating agent to chelate calcium ions,

c) reacting the chelated calcium ions with the chemiluminescent photoprotein to generate photons of light,

d) directing the photons of light to the spectrometer,

e) converting the photons of light to an electronic signal, and

f) recording the electronic signal.

26. (New) The method of claim 25 wherein pumping air into the reaction vessel comprises the further step of: pumping air through the particulate filter to remove particles greater than 20 μM.

27. (New) The method of claim 26 wherein filtering the air comprises the further step of: pumping the air at a rate of approximately 12.5 L/min.

28. (New) The method of claim 25 wherein pumping calcium containing endospores into the reaction vessel containing a chemiluminescent liquid comprises the further steps of:

a) dissolving 7.455 g of potassium chloride, 1.047 g of 3-[Morpholino] propanesulfonic acid and 19.01 mg of ethylenediamine tetraacetate tetrasodium salt in 1 L of water to form a buffer solution,

b) mixing 100 ml of the buffer solution with 1 g of aequorin to form the chemiluminescent liquid, and

c) inserting 20 ml of the chemiluminescent liquid in the reaction vessel comprising quartz.

29. (New) The method of claim 25 wherein reacting the

calcium containing endospores with the calcium chelating agent comprises the further step of: reacting the calcium containing endospores with ethylenediamine tetraacetate tetrasodium salt.

30. (New) The method of claim 25 wherein reacting the chelated calcium ions with the chemiluminescent photoprotein comprises the further step of: reacting the chelated calcium ions with aequorin.

31. (New) The method of claim 25 wherein reacting the chelated calcium ions with the chemiluminescent photoprotein comprises the further step of: reacting the chelated calcium ions with natural aequorin.

32. (New) The method of claim 25 further comprising the step of: counting the photons of light by directing them to a liquid scintillator spectrometer.

33. (New) The method of claim 25 wherein recording the electronic signal comprises the further step of: sending the electronic signal to a personal computer.

34. (New) The method of claim 33 wherein sending the electronic signal comprises the further step of: sending the electronic signal to a chart recorder.